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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,478

12/30/2004

Avigdor Bieber

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49443 7590 09/11/2009  
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EXAMINER

JOHNSON, CONNIE P

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

09/11/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,478	<b>Applicant(s)</b> BIEBER ET AL.	
	<b>Examiner</b> CONNIE P. JOHNSON	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-12 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-12 and 24-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/6/2009,6/25/2009</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/25/2009 has been entered.

***Response to Amendment***

2. The remarks and amendment filed 6/25/2009 have been entered and fully considered.
3. Claims 1-6, 8-12 and 24-26 are presented.
4. Claim 1 is amended.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 8-9 and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Crawford et al., U.S. Patent No. 4,387,156.

Crawford teaches imaging materials comprising a substrate, a metal/metal oxide layer and a photoresist applied on the metal/metal-oxide layer (col. 2, lines 51-60). The

Art Unit: 1795

metal/metal-oxide layer is representative of the laser-absorbing layer in the instant invention. The substrate, which is representative of the base layer, comprises an organic polymer material, such as polycarbonate (col. 3, lines 67-68) and polyethylene terephthalate, which are ink-accepting polymer materials (column 7, example 1-line 52) (instant claims 24 and 25).

Crawford teaches in example 1 that the metal/metal oxide layer comprises aluminum/aluminum oxide (column 7) (instant claim 2). The aluminum/aluminum-oxide layer has a thickness in the range of 15 Angstroms to  $5 \times 10^4$  Angstroms (0.0015 microns to 5 microns), which is inclusive of the claimed range 0.02 to 0.6 microns (col. 4, lines 44-46) (instant claim 6).

Crawford also teaches the metal/metal-oxide forms a graded layer by vapor deposition (col. 5, lines 27-30) and may be metal in metal-oxide or metal-oxide in metal with a homogeneous or anisotropic dispersion which transitions between higher metal/metal oxide ratios to regions of relatively lower ratios of metal/metal-oxide (col. 3, lines 1-21). Therefore, Crawford meets the limitation of "wherein said laser-absorbing layer has a gradient solid dispersion of metal and metal-oxide, forming varying concentration ratios of the metal and the metal oxide throughout a thickness of said laser-absorbing layer" (instant claims 1 and 4).

Example 1 discloses a vapor coating of aluminum/aluminum-oxide on a biaxially oriented polyester substrate, wherein oxygen is fed into a vapor coater in a less than stoichiometric equivalence wherein mostly pure aluminum is directly in contact with the substrate (polyester film in example 1) (example 1, lines 46-50 and 52-56). Therefore, Crawford teaches that the metal/metal-oxide layer has a non-stoichiometric ratio such

that there are more metal atoms than the stoichiometric ratio (instant claim 3) and that the non-stoichiometric ratio is bi-directional (instant claim 5).

Further, the example 1 in Crawford teaches the portion of the coating in direct contact with the polyester film (bottom of metal/metal-oxide layer) has more pure aluminum atoms, whereas the top portion of the metal/metal-oxide layer has more alumina (aluminum oxide) (col. 7, lines 60-63). Therefore, Crawford teaches the limitation, "that the concentration ratio of the metal to metal oxide within the laser-absorbing layer is higher than the concentration ratio of the metal to metal oxide at both edges of the laser-absorbing layer," wherein the edges of the laser-absorbing layer are the top and bottom of the metal/metal-oxide layer (specification, page 9, lines 25-27) (instant claim 1).

The recitation in claim 1, "so that less energy is needed for ablating the laser-absorbing layer than would be needed for ablating a laser-absorbing layer not having the gradient of concentration ratios but having about the same thickness and constituents than that of the laser-absorbing layer" is intended use and does not add patentable weight to the claim. Applicant is reminded of MPEP 2106 regarding intended use.

Crawford teaches imaging material that is curable by UV radiation (examples 2 and 3) (instant claim 9).

The photoresist composition in example 3 is developed in an aqueous solution to remove the unexposed portion of the photoresist. Therefore, the photoresist layer is ink-repelling (instant claim 8).

Crawford teaches an imaging composition comprising a substrate (base layer) with a vapor deposited graded aluminum/aluminum-oxide layer applied thereon and a

Art Unit: 1795

photoresist layer over the aluminum/aluminum-oxide layer, wherein the photoresist is ink-repelling and the substrate comprises ink-accepting polymer material. Therefore, the imaging composition of Crawford is “capable of being imaged such that selective areas of said coating layer and of said laser-absorbing layer are removed to expose said base layer,” as recited in instant claim 1.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 10, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al., U.S. Patent No. 4,387,156 in view of Goto et al., U.S. Patent No. 6,777,156 B1.

Crawford teaches imaging materials comprising a substrate, a metal/metal oxide layer and a photoresist applied on the metal/metal-oxide layer (col. 2, lines 51-60). The metal/metal-oxide layer is representative of the laser-absorbing layer in the instant invention.

Crawford also teaches the metal/metal-oxide forms a graded layer by vapor deposition (col. 5, lines 27-30) and may be metal in metal-oxide or metal-oxide in metal with a homogeneous or anisotropic dispersion which transitions between higher metal/metal oxide ratios to regions of relatively lower ratios of metal/metal-oxide (col. 3, lines 1-21). Therefore, Crawford meets the limitation of “wherein said laser-absorbing

Art Unit: 1795

layer has a gradient solid dispersion of metal and metal-oxide, forming varying concentration ratios of the metal and the metal oxide throughout a thickness of said laser-absorbing layer” (instant claim 1).

Further, the example 1 in Crawford teaches the portion of the coating in direct contact with the polyester film (bottom of metal/metal-oxide layer) has more pure aluminum atoms, whereas the top portion of the metal/metal-oxide layer has more alumina (aluminum oxide) (col. 7, lines 60-63). Therefore, Crawford teaches the limitation, “that the concentration ratio of the metal to metal oxide within the laser-absorbing layer is higher than the concentration ratio of the metal to metal oxide at both edges of the laser-absorbing layer,” wherein the edges of the laser-absorbing layer are the top and bottom of the metal/metal-oxide layer (specification, page 9, lines 25-27) (instant claim 1).

The recitation in claim 1, “so that less energy is needed for ablating the laser-absorbing layer than would be needed for ablating a laser-absorbing layer not having the gradient of concentration ratios but having about the same thickness and constituents than that of the laser-absorbing layer” is intended use and does not add patentable weight to the claim. Applicant is reminded of MPEP 2106 regarding intended use.

Crawford teaches an imaging composition comprising a substrate (base layer) with a vapor deposited graded aluminum/aluminum-oxide layer applied thereon and a photoresist layer over the aluminum/aluminum-oxide layer, wherein the photoresist is ink-repelling and the substrate comprises ink-accepting polymer material. Therefore, the imaging composition of Crawford is “capable of being imaged such that selective areas of said coating layer and of said laser-absorbing layer are removed to expose said

Art Unit: 1795

base layer,” as recited in instant claim 1. Crawford does not teach a form film nor a primer layer on the photoresist layer.

Additionally, Goto teaches an imaging material comprising a substrate and heat-sensitive layer. The printing plate also comprises a primer layer (col. 14, lines 4-6) and a protective film that has a polymer material, such as polypropylene (col. 14, lines 63-67). Polypropylene films have low surface energy as claimed (applicants' specification, page 4-line 27). It would have been obvious to one of ordinary skill in the art to use a primer layer in the imaging material of Crawford to improve adhesion between the substrate and the photoresist layer. Further, it would have been obvious to one of ordinary skill in the art to use the protective film in the imaging material of Crawford because protective films are conventionally used to protect imaging layers.

9. Claims 1 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al., U.S. Patent No. 4,387,156 (above) in view of Goto et al., U.S. Patent No. 6,777,156 (above) B1 and further in view of Nishida et al., U.S. Patent No. 5,417,164.

Crawford teaches an imaging material comprising a substrate, an aluminum/aluminum oxide layer on the substrate and a photoresist as relied upon above. Crawford does not teach that the photoresist comprises a silicon epoxy oligomer.

Additionally, Nishida teaches a printing material comprising a substrate, recording layer and a coating film applied on the recording layer. The recording layer comprises ink-repelling material, such as a silicon epoxy polymer (col. 7, line 2). It would have been obvious to one of ordinary skill in the art to use a silicon epoxy polymer in the photoresist of Crawford because silicon polymers, such as a silicon epoxy



Art Unit: 1795

polymers and silicon acrylate polymers increase ink-repelling properties of the radiation-sensitive layer as taught by Nishida (col. 6, lines 60-67 and col. 7, lines 1-12).

### ***Response to Arguments***

10. Applicant's arguments filed 6/25/2009, with respect to the rejection(s) of claim(s) 1-6, 8-12 and 24-25 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made herein.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Connie P. Johnson whose telephone number is 571-272-7758. The examiner can normally be reached on 7:30am-4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Connie P. Johnson/  
Examiner, Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795